

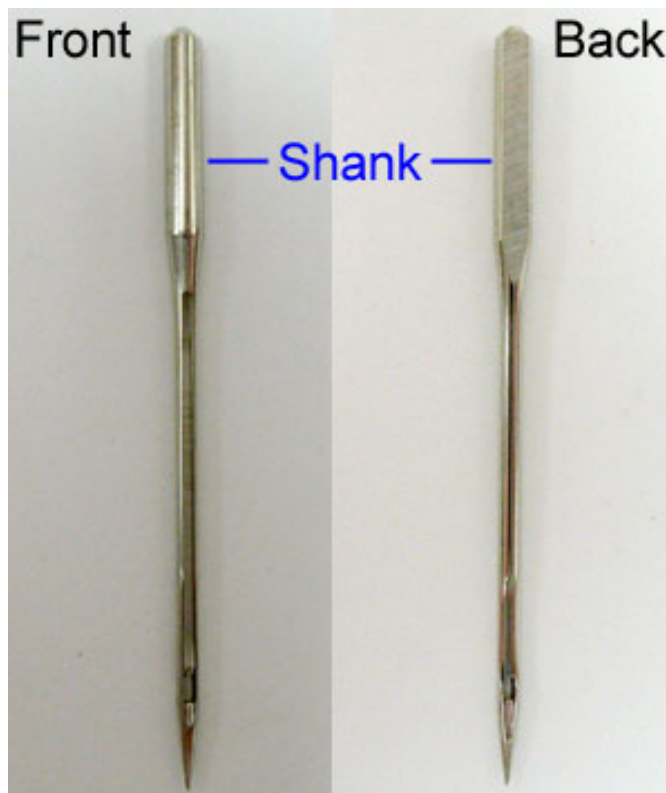
Know Your Needle

Kenny pinpoints the essentials from needle selection to needle anatomy.

Over the years, I've learned that needle choice is an integral part of the embroidering process. By pairing the correct needle with a specific thread or fabric, an embroidery design will run smoother and look crisper and cleaner. Plus, smart needle choice helps eliminate thread breaks.

Needle choice can easily be overwhelming. There are many different types and sizes of needles, and they all work differently with specific threads and fabrics. It's helpful for me to take into consideration the different parts of a needle, and how each part works, as I decide which needle to use for a specific project. This guide covers the needle's anatomy, characteristics of different needles and other factors I find useful when it comes to knowing my needle.

Experimentation is a great way to find out what works best. Try different techniques and options until you are satisfied. Much of the information and many of the suggestions below come from my experience, and what has worked best for me. But, it's always best to stick with what works best for you and your machine.



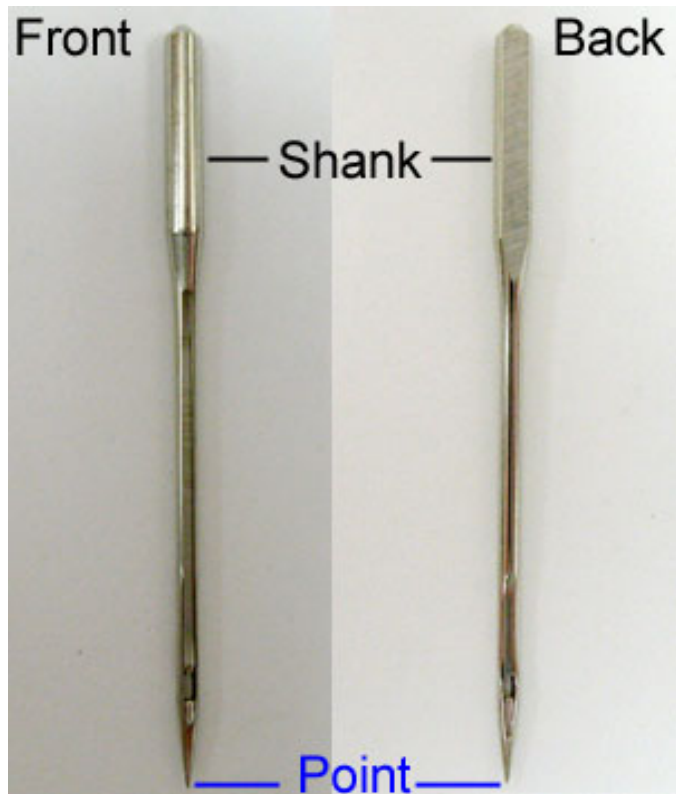
Shank

The shank is the thick, upper part of the needle that is inserted into the machine. Needles for embroidery machines have a flat side and a round side so that they fit properly into the machine.

Machine embroidery needles have a flat side and a round side.

Point

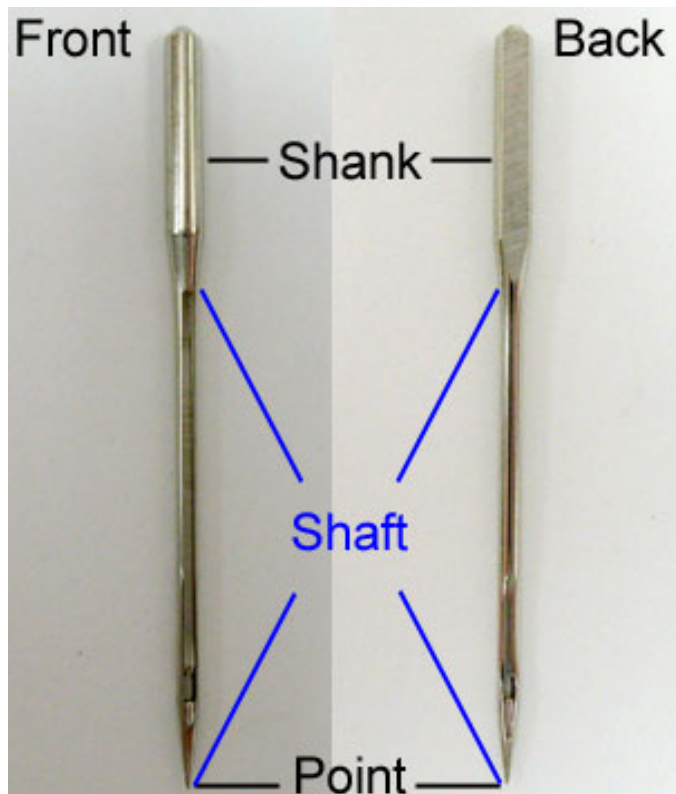
The point is the first part of the needle to make contact with the fabric. It's responsible for how the needle penetrates the fabric. For example, a larger needle will leave a larger hole.



The point makes first contact with the fabric.

Shaft

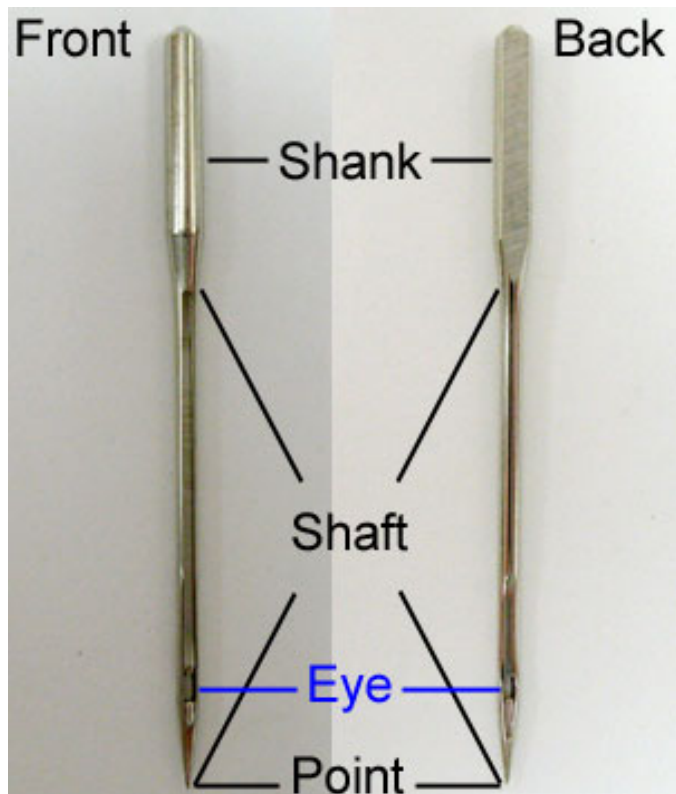
The shaft is the portion of the needle from the bottom of the shank to the point. It encompasses all of the rest of the parts of the needle.



The shaft encompasses the groove, scarf, eye and point of the needle.

Eye

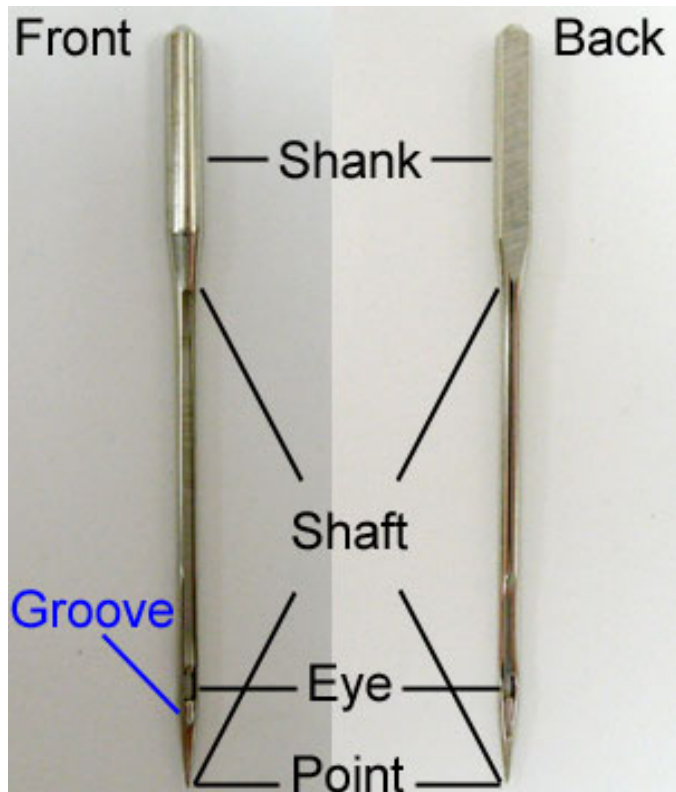
Thread is channeled through the needle in the eye. It carries the top thread into the bobbin casing, and then forms a stitch. The size of the eye varies with the type and size of the needle.



Thread goes through the eye of the needle.

Groove

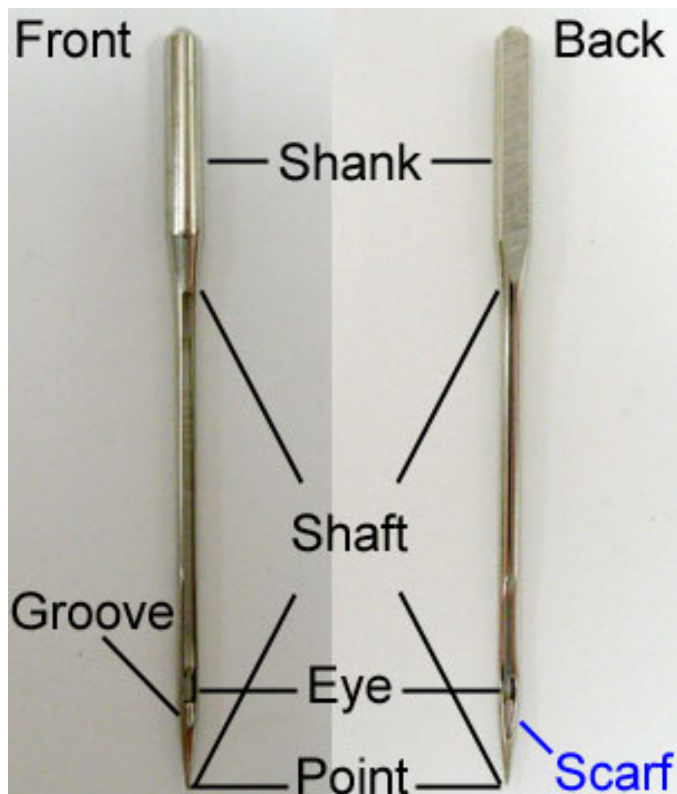
The groove of the needle always faces to the front and leads into the eye.



The groove always faces to the front.

Scarf

The scarf is an indentation on the backside of the needle, just above the eye. It allows the hook of the bobbin casing to get close enough to the eye of the needle to catch the thread and form a stitch.



The scarf is on the backside of the needle.

There are many different types of needles on the market, as well as specialty needles. Many dealers, instructors and fellow embroiderers might suggest a variety of recommendations. I have not found it necessary to use many different needles for different projects (I've had great luck using a size 11 sharp for almost everything), but it may be helpful for you to try different types and sizes of needles. In my experience, I'd ultimately recommend sticking with what works best for you and your machine.

Sharp Needle

These needles have a sharp point that penetrates most fabrics. Sharp needles work well with woven and knit fabrics, and work well penetrating heavier fabrics like denim and canvas. I like this needle the best because the small point leaves a very small perforation in the fabric, and that makes my embroidery look crisp and clean, well-defined.

I'm often asked about my needle choice. I've always used a size 75/11 sharp needle. The eye size is perfect for 40 weight rayon or polyester embroidery thread. And I've embroidered on everything from fleece to cardstock to lace with a size 75/11 sharp needle, and had great success.

Universal Needle

Similar to sharp needles, universal needles are sharp enough to penetrate most fabrics, and work well with knit and woven fabric. The tips are slightly rounded and tapered so that it slips through the weave of the fabric like a ball point needle, rather than cutting through the fibers as a sharp needle does.

Ball Point Needle

These needles have a rounded point, which is designed to slip in between the weave of the fabric, rather than penetrate through it. Ball point needles are designed to be used with knits like T-shirts and sweatshirts. A sharp or universal needle could

possibly cause a slight tear or run in the fabric because of the sharp point cutting through the fibers.

You might find that some experienced embroiderers recommend a ball point needle for knits. However, I've always used a sharp needle on knits, and never had any problems. I've experimented with both ball point and sharp needles on knits, and I got the same results with both needles. If you ever experience any slight tears, runs or "fuzziness" around a design and are using a sharp, universal, or embroidery needle, then try changing to a ball point needle.

Embroidery Needle

These needles are designed specifically for machine embroidery use, and for use with rayon and polyester embroidery threads. Embroidery needles work well with all fabrics. The eye of these needles is larger and longer than universal needles. And embroidery needles have a special, deep scarf on the front, plus a rounded point, which protects the thread from shredding and breaking.

While embroidery needles work well on all fabrics, I still recommend a sharp needle when embroidering directly onto water-soluble stabilizer. If you use an embroidery needle when making freestanding lace, that rounded point may stretch the water-soluble stabilizer, whereas a sharp needle will perforate neatly through it.

Leather Needle

The leather needle is designed to be used with leather and suede. It has a wedged point that allows the needle to better penetrate the thickness of suede and leather and leave a smaller perforation.

In my experience, a size 80/12 leather needle works the best. Unlike fabric, leather doesn't have a weave. It needs special attention and this essential needle.



Thick Thread Needle

Needles for thick thread have extra large eyes to accommodate the thread size. When working with a thick thread, like a 12 weight wool, use a size 110/18 universal needle.



Metallic Needle

Metallic needles are designed to be used specifically with metallic thread. These needles have a larger eye, which allows the thread to pass through with ease.

I've also used 75/11 sharp needles with metallic thread and have had excellent results.



Needle Care

There is a variety of opinions on often to change a needle. In my experience, as long as the needle is performing properly, there is no need to change it. However, if you start to notice rough stitching or thread breaks, change the needle immediately. As an estimate, I can suggest changing your needle every 50,000 to 60,000 stitches to keep it sharp and sewing as crisp as possible. You may need to change the needle more or less often depending on the type of fabric you use often (thicker, denser fabrics may dull the needle faster, requiring you to change the needle more frequently).

		75/11 Sharp Needle	Ball Point Needle	Universal Needle	Embroidery Needle	80/12 Leather Needle	Metallic Thread Needle	110/18 Universal Needle
Special Materials								
	Freestanding lace on water-soluble stabilizer (WSS)	x						
	Cardstock	x						
Cotton fabrics								
	Quilter's Cotton	x		x	x		x	
	Canvas	x		x	x		x	x
	Corduroy	x		x	x		x	x
	Denim	x		x	x		x	x
	Drill	x		x	x		x	x
	Duck	x		x	x		x	x
	Flannel	x		x	x		x	
	Gauze	x		x	x		x	
	Gingham	x		x	x		x	
	Muslin	x		x	x		x	

Organdy	x		x	x		x	
Percale	x		x	x		x	
Pique (golf shirt)	x		x	x		x	
Poplin	x		x	x		x	x
Sateen	x		x	x		x	
Seersucker	x		x	x		x	
Sweater (light-weight)	x	x	x	x		x	
Sweater (heavy-weight)	x	x	x	x		x	
Sweatshirt	x	x	x	x		x	
T-shirt (jersey knit)	x	x	x	x		x	
Terrycloth	x		x	x		x	
Velveteen	x		x	x		x	

Wool fabrics (Alpaca, Mohair, Angora, Camel, Cashmere, Vicuna)

Broadcloth	x		x	x		x	x
Felt	x		x	x		x	x
Flannel	x		x	x		x	
Gabardine	x		x	x		x	x
Herringbone	x		x	x		x	x
Jersey	x	x	x	x		x	
Merino	x	x	x	x		x	
Oatmeal	x		x	x		x	
Sharkskin	x		x	x		x	
Tweed	x		x	x		x	x

Silk fabrics (strongest natural fiber, oldest textile, fibers harvested from cocoon of silkworm)

Brocade	x		x	x		x	
Chiffon	x		x	x		x	

	Dupioni	x		x	x		x	
	Organza	x		x	x		x	
	Broadcloth	x		x	x		x	
	Linen	x		x	x		x	
	Satin	x		x	x		x	

Linen fabrics (from flax, strong, 2-3 times the strength of cotton, sturdy, smooth, lint-free)

	Butcher's Linen	x		x	x		x	x
	Damask	x		x	x		x	
	Venise	x		x	x		x	

Manufactured/ Synthetic (man-made) fabrics

	Acetate	x		x	x		x	
	Acrylic	x		x	x		x	
	Polar Fleece	x		x	x		x	
	Nylon	x		x	x		x	x
	Polyester	x		x	x		x	
	Rayon	x		x	x		x	
	Spandex	x		x	x		x	

Other materials

	Leather						x	
	Suede						x	
	Velvet	x		x	x		x	

Thread types

	12 weight wool							x
	40 weight rayon	x	x	x	x	x		
	40 weight polyester	x	x	x	x	x		
	50 weight cotton	x	x	x	x	x		
	Metallic	x					x	



Kenny is a master digitizer and Vice President of Production at Embroidery Library, Inc. He has more than twelve years of experience as an artist, digitizer, and embroiderer.

Ask Kenny! Send your questions to stitch@emblibrary.com.

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